Four New Stoneflies from California and Oregon
(Plecoptera)

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Four undescribed stoneflies, including a remarkable species of Capniinae, aquatic in the adult stage, are described below.

I am grateful to Dr. A. T. McClay, University of California, Davis, California, to Mr. Ted C. Frantz, Nevada Fish and Game Department, and to Dr. Glenn B. Wiggins of the Royal Ontario Museum, Toronto, for sending material to me for study. Particular thanks are due Mr. Alan V. Nebeker, University of Utah, for making the excellent figures. Financial assistance for carrying on some of the systematic research upon which this paper is based was provided by the National Science Foundation (Grant NSF-G12858).

Capnia lacustra Jewett, new species

Color of body and appendages straw to light brown. Apterous. Sternal sclerotization as in Fig. 1B. Length of body 4.5 to 5.5 mm. Length of antennae exceeds length of abdomen; length of cerci equal to or exceeding length of abdomen, slightly less than length of antennae.

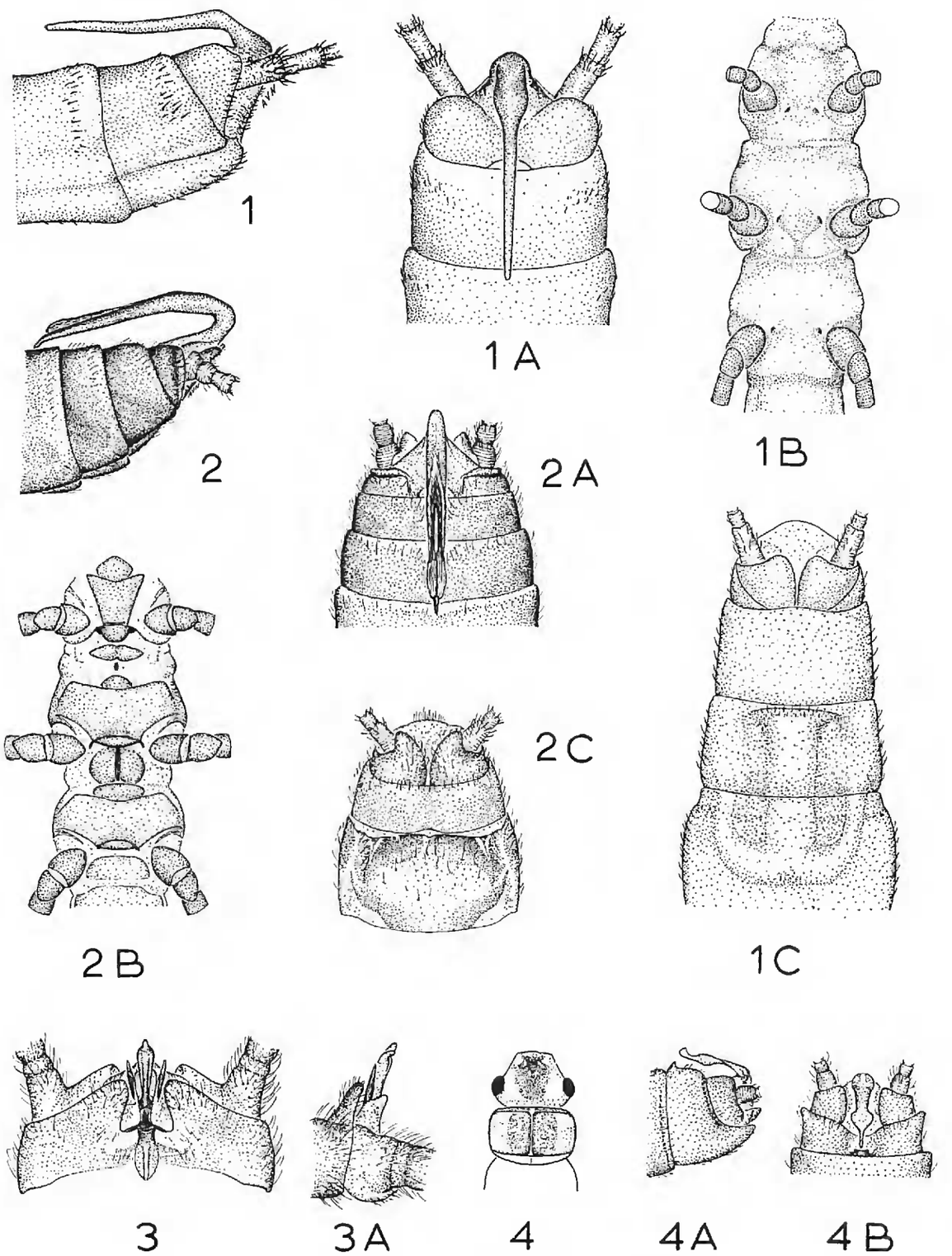
MALE.—First nine abdominal tergites without special modifications. Supra-anal process reflexed, very slender, extending forward beyond margin of eighth tergite (Fig. 1).

FEMALE.—Sternites 7, 8, and 9 virtually unmodified, faint anchor-shaped sclerotized area across sternites 7 and 8 on most heavily sclerotized specimens, genital opening narrow lateral slit near posterior margin of eighth sternite (Fig. 1C).

NYMPH.—Essentially, morphology of nymph, except for developed genitalia, is same as that of adult.

Holotype male, allotype female, one male, and one female paratypes and several nymphs.—BOTTOM OF LAKE TAHOE AT DEPTH OF 200 TO 264 FEET OFF CAVE ROCK, DOUGLAS COUNTY, NEVADA, 22 and 28 May 1962, T. C. Frantz. Additional paratypes include two males, Emerald Bay, at a depth of from 116 to 198 feet, Lake Tahoe, California, 11 July 1962, Cordone, Frantz, Weedlein. Many additional nymphs and several presumed adult females were taken at various places at the southern end of the lake between the first of April and the end of December 1962, from depths of about 100 to slightly over 400 feet.

This species is unique among described Plecoptera in its adult aquatic stage (Jewett, 1963). Morphologically, the male genitalia are generally



EXPLANATION OF FIGURES

Fig. 1, *Capnia lacustra* Jewett, male genitalia, lateral view; 1A, same, dorsal view; 1B, sclerotization of sternum; 1C, subgenital plate of female. Fig. 2, *Capnia oswegaptera* Jewett, male genitalia of holotype, lateral view; 2A, same, dorsal view; 2B, sclerotization of sternum; 2C, subgenital plate of female. Fig. 3, *Isogenus* (*Chernokrilus*) *venustus* Jewett, male genitalia of holotype, dorsal view; 3A, same, lateral view. Fig. 4, *Alloperla* (*Sweltsa*) *californica* Jewett, head and pronotum of holotype; 4A, male genitalia, lateral view; 4B, same, dorsal view.

similar to such winged species as *Capnia zukeli* Hanson and *C. confusa* Claassen, but the sternal sclerotization is quite different from that of any described species in *Capnia.*

I am not proposing a new generic name for this or the following species, though following recent Japanese authors (*vide,* Kawai, 1955), this might be justified on the basis of the sternal sclerotization. I am influenced, in part, in this decision by the recent discovery of an undescribed apterous species of *Capnia* obviously related to *C. columbiana* Claassen, a group thus exhibiting a range of full-wingedness in both sexes to complete absence of wings in both sexes. Mr. Nebeker has been studying this complex and the results of his work will be published soon.

Capnia oswegaptera Jewett, new species

Color of body and appendages dark brown except for light median stripe across first eight tergites in female. Apterous. Sternal sclerotization as in Fig. 2B. Length of body: 4.5 mm in male, 6 mm in female.

MALE.—First nine abdominal tergites without special modifications. Supra-anal process reflexed, slender, extending forward to seventh tergite in unrelaxed abdomen of holotype, probably only to eighth tergite when abdomen thoroughly relaxed. Process grooved dorsally, with translucent part raised slightly near tip and slightly expanded in dorsal view, narrow tip downturned (Figs. 2, 2A).

FEMALE.—Stripe across tergites does not traverse tergites 9 and 10, barely invades rear of tergite 1. Eighth sternite (Fig. 2C) modified, along rear margin forming rather heavily sclerotized broad, shallow subgenital plate, very slightly notched medially.

Holotype male, allotype female.—OSWEG CREEK, NEAR MOUTH, ABOUT 2 MILES EAST OF ELSIE, CLATSOP COUNTY, OREGON, 1 February 1964. Additional paratypes as follows: two females with same data as for holo- and allotypes except 21 February 1964. Not included as paratypes: one male, Chintimini Creek, Marys Peak, Benton County, Oregon, 3 April 1964, Scott and Wiggins; one male, North Fork of Rock Creek, Marys Peak, Benton County, Oregon, 13 April 1964, Scott and Wiggins.

The males from Benton County are slightly smaller than the holotype and the supra-anal process is smaller and without the raised part near the tip.

This species is similar to *C. disala* Jewett known only by the female type (Jewett, 1962). However, the female subgenital plates are dissimilar and the type of *C. disala* was taken later in the season.

Isogenus (Chernokrilus) venustus Jewett, new species

MALE.—Length to wing tips 18 mm. Length of body 14.5 mm. General color

very dark brown with infuscated wings. Head blackish with three-pronged yellow area medially at rear, one prong occupying most of ocellar area; M-line brown-yellow medially extending as V nearly to anterior ocellus. Pronotum black with large median orange-yellow stripe. Mesosternal Y-ridge extends to posterior corners of furcal pits, holotype without discernible auxiliary branches. Appendages dark brown. Venter of thorax and abdomen brown. First nine abdominal segments dark brown, tenth yellow. Seventh and eighth sternite medially with broad lobe, ninth sternite enlarged distally to enclose tenth segment. Tenth tergite cleft, distally forming pair of hairy lobes, below which lies five-pronged base of supra-anal process (Figs. 3, 3A). Process terete, lying between paragenital plates, its tip bluntly pointed and in same plane as rest of structure.

Holotype male.—ALTA, PLACER COUNTY, CALIFORNIA, 20 May 1952, A. A. Grigarick. Deposited in the collection of the California Academy of Sciences.

This species differs from the two described members of the rarely collected subgenus *Chernokrilus* principally in the shape of the male supra-anal process and in the color pattern of the head and pronotum.

Two large female specimens of *Chernokrilus* in my collection from Tehama and Plumas counties, California, may belong to this new species. The color pattern of the heads is similar.

Alloperla (Sweltsa) californica Jewett, new species

MALE.—Length to wing tips 11 mm. Length of body 8 mm. General color brownish yellow. Head (Fig. 4) with indistinct darker area occupying ocellar triangle, frons, and clypeus. Outer margins of pronotum narrowly edged with brown, inner margins with broader, darker brown edging that forms median dark stripe across pronotum; pronotal rugosities light brown. First seven abdominal tergites bear median dark stripe. Abdomen, thoracic segments, appendages, and major wing veins with noticeable brown pigment against yellow ground color. Supra-anal process arising from deep groove in tenth tergite, strongly reflexed, deeply notched in lateral view, apically narrow, long, and upturned, in dorsal view greatly expanded medially (Figs. 4A, 4B).

Holotype male and one male paratype.—RICHARDSON SPRINGS, NEAR CHICO, BUTTE COUNTY, CALIFORNIA, 5 April 1962, S. G. Jewett, Jr. Holotype deposited in the collection of the California Academy of Sciences, the paratype in my collection.

This species is related to *Alloperla coloradensis* (Banks) and to *A. fidelis* Banks, but the head and pronotal color pattern is different. The supra-anal process is much longer, the enlarged median area much less expanded, than in *A. coloradensis*. The process is less slender than that of *A. fidelis*.

LITERATURE CITED

JEWETT, STANLEY G., JR. 1962. New stoneflies and records from the Pacific Coast of the United States. Pan-Pac. Entomol., 38 (1): 15–20.

1963. A stonefly aquatic in the adult stage. Science, 139 (3554): 484–485.

KAWAI, TEIZI. 1955. Studies on the holognathous stoneflies of Japan. II. Descriptions of two genera, one new subgenus and three new species of the family Capniidae. Mushi, 28 (2): 5–11.

A Name Change and New Synonymy for a Species of *Ardis* in North America

(Hymenoptera : Tenthredinidae)

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Eide (1948) reported on a sawfly, identified as *Ardis sulcata* (Cameron), damaging Manetti rose and wild rose in the state of Washington. It was believed to be an introduced species. Middlekauff (1958) subsequently recorded this species from California on the basis of specimens reared from rosebuds. As a result of recent investigations on the genus *Ardis* and correspondence with Mr. R. B. Benson of the British Museum, it was found that these records were based on a misidentification. *Ardis sulcata* is not known to occur in North America. The species referred to by Eide and Middlekauff should be known as *Ardis brunniventris* (Hartig), a form found throughout the Holarctic Region. This conclusion is based on comparisons of North American specimens with a determined specimen of *brunniventris* sent to me by Mr. Benson and further substantiated by Mr. Benson from North American specimens which I sent to him. A key separating the adults of *sulcata* and *brunniventris* was published by Benson (1952).

The known range of this species in North America includes: Alberta, British Columbia, California, Colorado, Idaho, Illinois, Iowa, Manitoba, Michigan, Missouri, Montana, New Mexico, North Carolina, Northwest Territories, Ontario, Oregon, Utah, and Washington.

The following synonymy is based on the examination of North American types:

ARDIS BRUNNIVENTRIS (Hartig)

Monophadnus brunniventris Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 274.

Selandria irrogata Cresson, 1880. Amer. Entomol. Soc. Trans., 8: 13. ♀. N. syn.

Aphanisus odoratus MacGillivray, 1908. Canadian Entomol., 40: 296. ♀. N. syn.